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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------|-------------|----------------------|---------------------|------------------|
| 10/816,071 | 03/30/2004 | Xinping He | 384938080US | 8904 |
| 25096 | 7590 | 02/11/2005 | EXAMINER | |
| PERKINS COIE LLP | | | WILSON, ALLAN R | |
| PATENT-SEA | | | ART UNIT | |
| P.O. BOX 1247 | | | 2815 | |
| SEATTLE, WA 98111-1247 | | | PAPER NUMBER | |

DATE MAILED: 02/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

NA

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/816,071 | Applicant(s) HE, XINPING | |
| | Examiner Allan R. Wilson | Art Unit 2815 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 1 and 7 are objected to because of the following informalities:

Claims 1 and 7 recites the limitation “the current passes through the body” in last line and next to last line respectively. There is insufficient antecedent basis for this limitation in the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 4-6 are rejected under 35 USC § 102(b) as being anticipated by Inoue et al. (“Inoue”) U.S. Patent No. 6,211,509.

With regards to claim 1, Inoue illustrates in figures 1A-7E, particularly figures 1A and 5, (entire document) a light sensing element 1 formed in a semiconductor substrate 21; a sense node (gate of 2 in fig. 5) in electrical communication with said light sensing element for outputting a signal produced by said light sensing element; an amplification transistor 2 controlled by said sense node.

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With regards to claims 1 and 7, the limitation “when said amplification transistor is in an on state, most of the current passes through the body of the body of the amplification transistor” is an inherent function of the structure and since the prior art has the same structure and materials as the claimed invention it will have the same inherent function. Almost all the current will flow through the channel when a transistor is on.

With regards to claim 2, Inoue illustrates in fig. 5 and discloses in at least col. 5, lines 65-67, said light sensing element 1 is a photodiode.

With regards to claim 4, Inoue illustrates in fig. 5 said amplification transistor 2 outputs an amplified version of said signal to a column bit line 8.

With regards to claim 5, Inoue illustrates in fig. 5 a reset transistor 4 operative to reset said sense node to a reference voltage.

With regards to claim 6, the claimed “depletion mode transistor” is not considered to add any structure to the claimed device and is considered to be intended use of the device. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte* Masham, 2 USPQ2d 1647 (1987).

Claims 7-12 are rejected under 35 USC § 102(b) as being anticipated by Matsunaga et al. (“Matsunaga”) U.S. Patent No. 6,239,839.

With regards to claim 7, Matsunaga illustrates in figures 1-37, particularly figures 8, 34 and 35, (entire document) a light sensing element 62 formed in a semiconductor substrate 81; a sense node (gate of 64); a transfer transistor 306 operative to transfer a signal produced by said

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light sensing element to said sense node; and an amplification transistor 64 controlled by said sense node.

With regards to claim 8, Matsunaga illustrates in figs. 34 and 35, and discloses in at least col. 18, lines 35-54, said light sensing element 62 is a photodiode.

With regards to claims 9 and 12, Matsunaga discloses in at least the abstract said transfer transistor is a buried transistor (MOS-type).

With regards to claim 10, Matsunaga illustrates in figs. 34 and 35 said amplification transistor 64 outputs an amplified version of said signal to a column bit line 8.

With regards to claim 11, Matsunaga illustrates in figs. 34 and 35 a reset transistor 66 operative to reset said sense node to a reference voltage.

With regards to claim 12, the claimed "depletion mode transistor" is not considered to add any structure to the claimed device and is considered to be intended use of the device. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claim 3 is rejected under 35 USC § 103 (a) as being unpatentable over Inoue as applied to claim 1 above, and further in view of Matsunaga. Inoue is discussed above, it does not show a transfer transistor. Matsunaga illustrates in figures 34 and 35 a transfer transistor 306. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a transfer transistor to control charge from the light sensing element to the amplification transistor.

Response to Arguments

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from an examiner should be directed to Primary Examiner Allan Wilson whose telephone number is (571) 272-1738. Examiner Wilson can normally be reached 7:00-4:00 Monday-Thursday and 6:00-3:00 on Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allan R. Wilson
Primary Examiner
7 February 2005